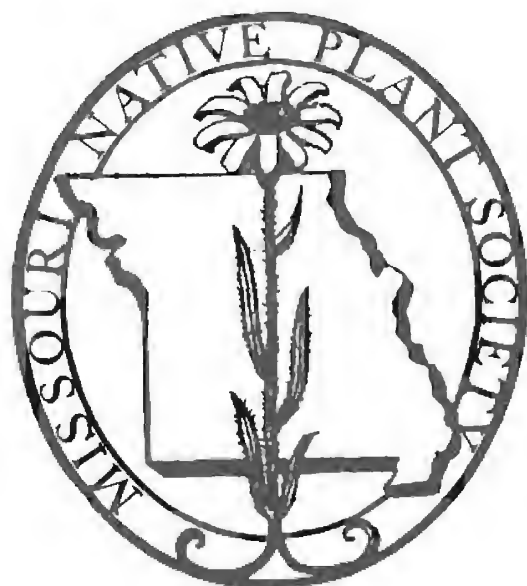

VOLUME 5

1984

NUMBER 4

Missouriensis



JOURNAL OF THE
MISSOURI NATIVE PLANT SOCIETY

CONTENTS

Missouriensis is the official publication of the Missouri Native Plant Society. Founded in 1979 as a non-profit corporation, the Society is devoted to the conservation and study of the plants growing wild in Missouri, to the education of the public about the significance of the native flora and its habitat, and to the publication of related information.

Minutes from the Fall Board Meeting	p. 124
by Jean Webdell	
Results of the Membership Survey.	p. 127
by Jean Webdell	
Missouri's Interesting Flora: Wood Anemone.	p. 129
by Art Christ	
An Addition to the Flora of Missouri Found at the Missouri State Fairgrounds.	p. 130
by David Castaner	
Wild Leeks in Missouri.	p. 132
by Joanna Turner	
<u>Aster vimineus</u> Lam. var. <u>vimineus</u> in Taney County	p. 134
by Alice Allen Nightingale	
<u>Veronica anagallis-aquatica</u> L. in Taney County.	p. 136
by Alice Allen Nightingale and Kenton C. Olson	
The Missouri State Parks System's Herbarium Qualifies for International Status.	p. 138
by Paul W. Nelson	
News and Notes.	p. 140
Missouri Botanical County Records	p. 143
edited by Wallace Weber and Jay Raveill	
Enclosed with this Issue:	
BALLOT	
Index to Missouriensis Volumes 1-3	
compiled by Catherine Filla and Joanna Turner	

Minutes from the Fall Board Meeting

Missouri Native Plant Society
Saturday, September 22, 1984
University of Missouri, Columbia

ATTENDANCE

Board Members present: President Melvin Conrad, Vice President Nancy Morin, Treasurer John Karel, Secretary Jean Webdell, Ginny Wallace, Jay Raveill, James E. Dimit, Joanna Turner, John L. Doggett, Wally R. Weber, and John Molyneaux.

Members present: Dick Humphrey, Joanne L. Watkins, Lynda Richards, Robert Hansen, John Logan, Martha Harris, Jean Freiling, Alex Cole, Dorothy Cole, Randal Clark, Monte Holder, Cal Royell, Dotty Epstein, Bill Epstein, Mervin Wallace, Art Christ, Sherry Morgan, Jim H. Wilson, Jim Key, Dona Key, Betty Nellums, Erna Eisendrath, Bill Summers, Dorothy Leake, Dick Russell, Susan Russell, Dave Castaner, Millie Curner, Dave Dunn and Steve Chaplin from the University of Missouri.

The meeting was called to order by President Melvin Conrad. Members present introduced themselves.

The minutes were approved as printed in MISSOURIENSIS.

TREASURER'S REPORT

The Treasurer's Report was made by John Karel. Income was Membership Dues - \$172.50 and money for Breakfast in Cape Girardeau - \$163.12, totaling \$335.62. (Note: Bill for breakfast has not yet been received.) Cash on hand on April 26, 1984, was \$4,924.41. Total income and cash - \$5,278.03. Disbursements included \$24.30 for utilities at MONPS meeting at Cuivre River State Park in October 1983; \$50.00 donation to the Missouri Park Association for the first State Parks Conference as authorized by the Board; and \$1,364.00 to the Missouri Botanical Garden for the printing and mailing of three issues of MISSOURIENSIS. Balance on hand as of September 21, 1984 - \$3,838.73.

MEMBERSHIP REPORT

No report other than what concerns local chapters.

QUESTIONNAIRE

A preliminary report was made on partial results of the questionnaire mailed with membership notices. These were compiled by Jean Webdell, Jean Freiling, and Bill and Dotty Epstein. By far the most important reason for belonging to MONPS was to preserve wildflowers. Complete details will be in MISSOURIENSIS.

ST. LOUIS CHAPTER OF MONPS

Board members had been in receipt of a letter from Dotty Epstein, President of the St. Louis Chapter of MONPS, requesting a decision on the collection of dues for the local and state organization. In her excellent letter Mrs. Epstein outlined considerations for three options for collection of dues. First, the dues could be collected on the local level and state dues forwarded to the state treasurer. Second, dues on the local level could be accessed in the form of field trip and meeting fees. Or third, members would send their dues to the state treasurer, who would then remit a portion back to the local chapter. This is similar to methods used in California and Florida.

A report was then submitted to the board by Wally Weber and James H. Wilson, who had reviewed the letter from Mrs. Epstein and MONPS Bylaws.

The committee did not feel that the dues should be collected by the state treasurer and returned to St. Louis. This was for several reasons: (1) it would require the establishment of different levels of dues; (2) it would place the burden of organization and record keeping for the chapter with the state treasurer, who might not be a member of the St. Louis Chapter; or (3) if there were no different levels, it would require accessing all members, whether local chapter members or not, additional dues.

The committee then recommended, after looking at the bylaws, that the local chapter treasurer or secretary-treasurer should collect local and state dues and remit those dues belonging to the state to the state treasurer.

A discussion then ensued. President Melvin Conrad noted that by local chapters collecting the dues, they could vary the amount collected on the local level.

Jean Webdell asked that it be considered that an additional \$3 be collected from all members and the money used to start other local chapters and expand the membership of MONPS.

A motion was made and adopted that the local chapters shall collect all local and state dues. The state dues will then be forwarded to the state treasurer.

As set out, the following procedures will be used to handle membership: (1) the membership committee will draft information to be put in MISSOURIENSIS and a letter for the state treasurer to send out with the billing for dues that will explain about being a member of the St. Louis Chapter and the cost; (2) those wishing to belong to the St. Louis Chapter will remit their dues (local and state) to St. Louis, where the state's portion will then be forwarded on to the state treasurer.

A motion was also made and approved that \$100 be sent immediately to the St. Louis Chapter by Treasurer John Karel.

ELECTION OF BOARD MEMBERS

President Melvin Conrad apologized for not appointing a nominating committee to select members to be nominated to fill the expired offices now held by Otto Ohmart and John Doggett.

In accordance with the bylaws, the committee of Jim H. Wilson, John Doggett, Sherry Morgan, and Jim Key was appointed to nominate board members and also officers for the June 1985 election.

SPECIAL ELECTION

Nancy Morin announced her resignation as Vice President of MONPS. This was brought about for two reasons: (1) to have less concentration of board members in St. Louis; and (2) to give her more time to work on MISSOURIENSIS. A special election by the board then took place. Nominated were Sherry Morgan and Dave Castaner. Mr. Castaner was elected.

NEXT MEETING

Set for January -- possibly the weekend of January 12-13 -- to be held in St. Louis with Dr. Julian Steyermark to be invited as guest speaker.

Results of the Membership Survey

Earlier this year as part of membership renewals, a questionnaire was sent to members to solicit their input into the Missouri Native Plant Society. It was hoped that the information obtained would help make our organization more responsive to members' needs and interests. One-hundred fifty-seven questionnaires were returned. While the results were not surprising, the comments were fascinating. In addition, a large group of people volunteered to help the organization in various ways, and their names are being forwarded to appropriate board members for recruitment.

Beginning with question number one, which concerned what members felt was the most important function of the Missouri Native Plant Society, by a large majority, members felt that the preservation of plants, wild areas, and plant communities was the most important. The exchange of information concerning plants was listed as the second most important to members. This was followed by the updating of Missouri plants, and the Newsletter. Much lower in preference were making statewide contacts and the attendance of meetings.

MISSOURIENSIS was the second area of concern in the questionnaire. Of those who replied to the question, 117 had received their copies of issues and 26 had not. The 26 names have been forwarded to the MISSOURIENSIS mailing list. It is unknown at this time why the names were not on the mailing list or if the books were lost in the postal system.

In response to the question about the content of MISSOURIENSIS, by far the majority of people preferred either articles of general interest or scientific topics. Scientific articles were selected number one by 54 respondents and general interest articles finished second. However, when first and second choices were added together, general interest articles finished higher with 76 people selecting those articles as their first or second choice. Seventy-one people chose scientific articles either first or second. Other topics to be covered included directions to interesting locations, which was either the first or second choice of 57 respondents. Articles for children and general membership articles were very much lower. However, after compiling these questionnaires with the help of three other members, we were all in agreement that MONPS members are a fascinating bunch, and we should learn more about each other. Many interesting comments were written about other articles that should be published or that have been published. These comments will be sent to the editors.

The next area of interest was field trips and meetings. Very few people who completed the questionnaires had been to more than five meetings. Saturdays and Sundays were the best days for meetings and field trips. Of the people who completed the question if they would be interested in local MONPS field trips, only two said they would

not. Of the 18 who did not reply to the local field trip question, many did not because they live out of state.

Most people favored natural areas as their first or second choice (122) for field trip sites. Areas not normally open to the public was listed second highest with 105 selecting those areas either first or second. Public lands and state parks were much lower as first choices with only 12 people picking one of those areas for their first or second choice. However, as one person noted, the type of land didn't really matter; what was on it was the important thing.

The selection of area types that people were most interested in visiting resulted in prairies being the highest area of interest. Fifty people picked them either as their first or second choice. The second highest area of interest was the glade, with 46 people ranking it one or two. Not far behind was wooded areas with 35 and fens with 28. Areas of lowest interest were sinkholes and caves. The closeness of this section probably indicates that to rank area types was particularly hard. Suggestions for other areas included power lines, orchards, and swamps, etc. One member volunteered her property for a field trip. Several people refused to select, one stating they were all interesting.

The questions and results of this questionnaire would not pass standards for scientific research, but hopefully the members who received the questionnaire gave careful consideration to the MONPS organization. Hopefully, they thought about what the organization could do for them, the preservation of our plants and plant communities, and what they could do for the organization. Those who completed the questionnaire have given the officers and board members some direction about their areas of interest and concern. The officers and board members should be excited to know about the many interesting members who are vitally concerned about plants and the MONPS organization.

Thanks to Jan Freiling and Dotty and Bill Epstein for help with the questionnaires.

Missouri's Interesting Flora: Wood Anemone

Art Christ¹

On May 8, 1984, Karen Haller, John Molyneaux and I left for a two-day field trip to Shannon County. We were photographing the rare Waldsteinia fragarioides (Michx.) Tratt. (Barren Strawberry) when we observed an unfamiliar plant growing in the same area. We identified it as Anemone quinquefolia L. (Wood Anemone), which is a new species for Missouri.

Anemone quinquefolia L. is a low, delicate woodland plant that is from 10-20 cm in height. It has a solitary stalked flower that is about 2.5 cm across. The flowers do not have petals, but the four to nine white sepals are petal-like in appearance. Below the flower stalk there is a whorl of three stalked, deeply cut leaves, each of which is divided into from three to five narrow and sharply toothed segments, each about 3.1 cm long. There are also basal leaves that are similar to the ones on the flower stem, but they are either not present or just starting to grow at flowering time. The flowers have numerous stamens and pistils.

Anemone quinquefolia L. is found in open woods, thickets, and clearings. This species is rare in Illinois, but has been found in the northern fourth of the State. It is found from Quebec to western New York, south to North Carolina, and locally in Ohio and Kentucky. It flowers between April and June.

Anemone quinquefolia L. belongs to Ranunculaceae (Crowfoot family). The generic name Anemone is from the ancient Greek and Latin name, while the specific name quinquefolia means "five-leaved."



¹3458A Watson Rd. St. Louis, MO 63139

An Addition to the Flora of Missouri Found at the Missouri State Fairgrounds

David Castaner¹

This is the fifth report to the membership of the Missouri Native Plant Society on taxa new to Missouri from the Herbarium at Central Missouri State University (WARM).

An Alyssum was recently discovered in a routine examination of plants collected by students in our plant identification course (Systematic Botany, Biology 3711). Student collections are routinely verified and inspected for quality. A specimen collected by John D. Miller (Miller 77, 30 April 1983, Pettis County, Sedalia, State Fairgrounds, near the grandstand) during the spring of 1983 was initially turned in as Lesquerella filiformis, a very similar species. During the verification process, however, it was found to be A. desertorum Stapf (no common name; Figure 1).

In Missouri, only Alyssum alyssoides L. has been reported (Henderson, 1967). Another Alyssum, A. minus (L.) Rothmaler, is currently spreading in the high plains of Colorado (Weber, 1967). Alyssum desertorum is spreading in the Northwestern States of Oregon, Washington, Idaho, and Montana (Hitchcock, 1967). Since A. minus is geographically found nearer Missouri, I would have expected to find it in Missouri first; however, in view of the wide attraction of State Fairs to interstate travellers, it is not surprising that it was found at the Missouri State Fair.

The species forms a small colony near the grandstands. I have visited the colony in both 1983 and 1984 and it is still extant.

The following key may be inserted into the Flora of Missouri (Steyermark, 1952). Since A. minus may appear in Missouri in the future, it is included. The key will serve to characterize the species discussed. Refer to page 731 (Key to Genera of the Cruciferae).

- 16. Petals yellow; hairs on plant star-shaped (stellate) 16A
 - 16A. Fruit not flattened or very scarcely flattened; basal rosette present Lesquerella
 - 16A. Fruit obviously flattened; no definite rosette formed.
Alyssum 16B
 - 16B. Fruit glabrous; sepals deciduous in fruit; 8-15 cm tall; densely stellate-pubescent throughout Alyssum desertorum

¹Herbarium, Biology Dept., Central Missouri State University, Warrensburg, MO 64093.

- 16B. Fruit stellate pubescent. 16C
- 16C. Styles 0.5 mm long; sepals persistent in fruit.
 Alyssum allysoides
- 16C. Styles 1.5-2 mm long; sepals deciduous in fruit
 Alyssum minus

Literature Cited

- Henderson, N. C. 1967. Additions to the Flora of Missouri. Trans. Missouri Acad. Sci. 1: 77 (Abstract).
- Hitchcock, C. Leo, et al. 1964. Vascular Plants of the Pacific Northwest. Univ. of Washington Press, Seattle. Volume 2. 597 pp.
- Steyermark, J. A. 1963. Flora of Missouri. Iowa State Univ. Press, Ames. lxxxii + 1728 pp.
- Weber, W. A. 1967. Rocky Mountain Flora. Univ. of Colorado Press, Boulder. vii + 737 pp.

Figure 1. Xerograph
 of Miller 77,
Alyssum desertorum.
 1 x.



Wild Leeks in Missouri

Joanna Turner¹

A population of wild leek found in a wooded area of our property in Jefferson County has been confirmed as Allium burdickii (Haynes) A. G. Jones. Formerly all native wild leeks were classified under the species name Allium tricoccum Solander in Aiton, although variations have long been noted. Jones (1979) has reevaluated the status of the variant plants and declared a new species, A. burdickii, on the basis of significant morphological differences and reproductive isolation.

It took two growing seasons to identify the plants because the leaves are considerably narrower than the tulip-shaped leaves of the wild leeks I had previously seen. In addition, the leaves of the plant, which appear about two months before anthesis, have the disconcerting habit of dying back after about a month, and therefore locating the plants is difficult.

Once the plants were recognized, Jay Raveill helped out by informing me of the new species name. A specimen collected from a group of 11 flowering plants on 26 June 1983 is deposited in the Herbarium at the Missouri Botanical Garden. A specimen of the leaves taken from approximately 30 plants on 5 April 1984 is also deposited at MO.

Jones (1979) and Jones & Shildneck (1980) have declared A. burdickii to be of rare or doubtful occurrence in Missouri. A check of the Missouri Botanical Garden Herbarium showed Jones had tentatively determined three of the old Missouri specimens of A. tricoccum to be A. burdickii, but in a personal communication she expressed some doubt about these identifications. She suggests the find be considered as confirmation of A. burdickii in Missouri and as a new county record for Jefferson County. She also kindly gave permission for the reproduction of the following key, which should be helpful in future mapping of the distribution of wild leek in Missouri.

KEY TO THE SPECIES OF WILD LEEK²

Plants forming extensive clonal colonies; bulbs ovoid, 4-6 cm long and 1.5-3 cm in diameter; leaves elliptic to oblong-oblancheolate, tapering into a distinct petiole-like base, (15-)20-30(-40) cm long and (3-)5-8(-9) cm wide, the sheaths, petioles and lower portion of midribs maroon red;

¹166 N. Brentwood, St. Louis, MO 63105

²From Jones & Shildneck (1980, p. 59)

scapes rising (12-)25-35 cm above the ground when fully grown, flexuous and bent in the upper portion; inflorescence buds usually nodding, the scapes and bracts at least somewhat red pigmented; umbels comprised of (20-)30-50(-60) flowers; perianths and capsules 4-6 mm high; seeds 3.0-3.2 mm in diameter. Flowering period: throughout July (occasionally into August).

1. Allium tricoccum Solander in Aiton

Plants growing in small scattered clusters of 3-20 individuals; bulbs slenderly ovoid, 2-4(-5) cm long and 1-1.5(-2) cm in diameter; leaves linear to linear-lanceolate, lacking a distinct petiole-like base, (10-)14-24 (-28) cm long and (1.5-)2-4(-4.5) cm wide, the sheaths and leaf-bases white; scapes green, lacking any trace of red pigment, rising (10-)13-16(-18) cm above the ground when fully grown, usually straight, the green-bracted inflorescence buds upright; umbels comprised of (6-)12-18 (-24) flowers; perianths and capsules 3-5 mm high; seeds 2.8-3.0 mm in diameter. Flowering period: throughout June.

2. Allium burdickii (Haynes) A. G. Jones

LITERATURE CITED

- Jones, A. G. 1979. A study of wild leek, and the recognition of Allium burdickii (Liliaceae). Systematic Botany 4: 29-43.
Jones, A. G. & R. Shildneck. 1980. A note on the distribution of wild leek in Illinois. Transactions of the Illinois Academy of Science 72: 60-63.

Aster vimineus Lam. var. vimineus in Taney County

Alice Allen Nightingale¹

On August 13, 1984, a six-foot tall miniature-flowered weed was observed in an abandoned flower garden on the School of the Ozarks campus. At first glance, it was assumed to be just "Canada fleabane" and the plant was broken off about 15 inches from the ground to keep it from spreading. However, a closer look revealed that it was not an Erigeron but an unbelievably small Aster. The +26 bracts at the base of the + 4 mm high heads were definitely graduated and imbricated with 3 to 4 series of bracts, the shortest on the outside. The receptacle was flat and alveolate. Since I had never seen an Aster that small, the plant ended in the laboratory instead of the trash can. It was studied, identified as Aster vimineus Lam., and mounted as specimens Soto 3692 and 3693, covering the development of the flowers from early stage to fruiting heads.

There were in each head about 14 to 16 white ray flowers and 10 to 14 tubular flowers, on the average. The plant was kept in water in the laboratory for subsequent study as the flowers matured and the white rays extended to display open "flowers" mostly 5 to 10 mm in diameter and 5 or 6 mm high. These tiny heads were crowded in close racemes on short bracteate branchlets or pedicels 3 to 5 (occasionally 6) mm long, but what they lacked in size they made up in number, for the inflorescence (a compound raceme with more or less recurved branch tips) measured up to 12 inches wide and 18 inches in length with hundreds of heads. Use of the botanical keys put the plant in Aster vimineus Lam., which Steyermark lists as having flower heads "among the smallest of all the native species of Aster in Missouri."

At first it seemed natural to assume that the plant belonged to var. subdumosus Wieg., since Steyermark reported that variety as "scattered in southern and central Missouri." None of the reports were nearer than Greene and Jasper counties to the north and Howell to the east of Taney, but var. vimineus had been reported only from Monroe County in northeastern Missouri. However, the arrangement of the flowers on the branches did not look at all like that of the drawing for var. subdumosus Wieg. on plate 360 of Steyermark's "Flora of Missouri," so further studies were made. This included a second smaller (3 ft. 8 in. tall) plant which was gathered root and all September 6, 1984, from the same weedy garden. At that date, the first plant whose roots and lowest flowering branches had been left to grow and develop was already producing seeds to supplement its perennial nature.

¹Biology Herbarium, The School of the Ozarks

Measurements and microscopic studies of the heads of this second plant, made by both Dr. Kenton Olson and myself, proved this specimen to be the same as the larger plant, and so its rhizomatose roots and all were mounted as Soto 3694 "a" to "d" of which Soto 3694 "d" was sent to Missouri Botanical Garden's herbarium. Because the inflorescence has "heads densely crowded on short bracteate branchlets or pedicels mostly less than 7 mm long," (Gray), instead of being "loosely racemose or scattered on diffuse branchlets or pedicels mostly 0.5 to 30 mm long," we feel that, if this varietal differentiation is maintained, then our specimens belong to Aster vimineus Lam. var. vimineus, a new species and variety for Taney County.

Gleason and Gleason & Cronquist do not list two varieties but their description adequately describes as Aster vimineus Lam. the plants being studied. So in either case the specimens constitute a new species not already listed for that area of Missouri.

Literature Cited

- Gleason, H. A. 1952. Britton and Brown Illustrated Flora of the Northeastern U.S. and Adjacent Canada. Hafner Press for New York Botanical Garden Vol. 3: 444, 464, 465.
- Gleason, H. A. & A. Cronquist. 1963. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. D. Van Nostrand Co. Inc. li: +810 pp.
- Gray's Manual of Botany (rewritten and expanded by Merritt L. Fernald) 8th Edition, 1950. Amer. Book Co. lxIV: +1632 pp.
- Steyermark, J. A. 1963. Flora of Missouri. Iowa State Univ. Press, lxxxiii: +1728 pp.



Veronica anagallis-aquatica L. in Taney County

Alice Allen Nightingale and Kenton C. Olson¹

The plants formed a large population growing in the shallow water and soggy bottom of the drainage ditch runoff from the rose garden beside the entrance road to the School of the Ozarks campus (T22N, R21W, S8, Taney Co.). When collected on 9/23/84 by Dr. Olson, the colony was in full bloom with many axillary racemes each bearing 20-50 or more bluish-violet four-lobed corollas ["Pale grayish violet blue" Plate XXIV to "Pale Wisteria Violet" Plate XXIII, Ridgeway, 3].

The plants had evidently been blooming for some time for, though the tips of the racemes were still crowded with young, growing flower buds, some of the older lower racemes had their lower blossoms already shedding seeds. Gleason & Cronquist (1) cites a blooming period of May-September and states that this species is "a native of Europe, now established throughout our range" but he does not claim to cover our state "south of the Missouri River." Gray (2) gives a "May-October" blooming period and says that it is "apparently both indigenous and naturalized from Europe" but cites no location for it nearer than Tennessee and Texas.

The three upper petal lobes of the corolla are larger than the lower lobe and are decorated inside with dark blue lines ending at the opening of the short tube. The two exerted stamens have dark blue (almost black) anthers and the style is entire with a single stigma. The fruits nestled in the middle of the 3 to 4 mm long acuminate sepals are roundish to slightly ovate and usually not at all notched or only very slightly so. They were 2.5-4 mm long, about the length of or a little shorter than the four green sepals. When ripe the capsules opened lengthwise in the center to expose the two chambers each of which bore several (3-6) tiny seeds ($\frac{1}{2}$ mm or less). The style (2 mm $\pm$ long) still remained attached to the mature capsule.

The elliptic or ovate opposite leaves of the flowering stem are entire (occasionally very slightly serrulate), 40-60 mm long and 20-25 mm wide. They are definitely sessile with clasping bases which in most cases are in close contact with the opposite leaf base. A few leaves near the bottom of the plants had wide subpetiolar bases which narrowed to 8-10 mm at point of attachment and did not actually clasp the stem in a way to make union with the opposite leaf.

However, the plants produced a number of slender "sterile autumnal shoots" (1) whose leaves were smaller (usually under 15 X 30 mm), more

¹Biology Herbarium--The School of the Ozarks

rounded and petiolate (petioles 3-5 mm long). New fibrous roots usually occurred at the junction of these new branches with the stem. In fact, growing conditions were seemingly so favorable that new roots were beginning to form at the nodes of the upper clasping leaves.

Since this species usually grows in wet places near springs, ditches, and shores, it is conceivable that tourists pulling boats in trailers could be responsible for bringing in the original seeds which brought this species to its present location. It is readily distinguished from V. comosa Richter, which "has smaller whitish to pale rose corollas and deeply notched capsules" (2).

Literature Cited

1. Gleason, H. A. & A. Cronquist. 1963. Manual of Vascular Plants of Northeastern United States and Adjact Canada. D. Van Nostrand Co., Inc. li + 810 pp.
2. Gray's Manual of Botany. (rewritten and expanded by Merritt L. Fernald). 8th edition 1950. American Book Co. lxiv + 1632 pp.
3. Ridgeway, R. 1912. Color Standards and Color Nomenclature. Published by the author. A. Hoen and Co. Press, Baltimore. liii Plates.

The Missouri State Parks System's Herbarium Qualifies for International Status

Paul W. Nelson¹

We are honored to acknowledge the recent acceptance by Patricia K. Holmgren of the New York Botanical Garden of the listing of our herbarium in the 7th edition of the Index Herbariorum. The Index Herbariorum contains information on herbarium resources of the United States and the world. Requirements for listing include a minimum of 5,000 specimens. The herbarium contains 5,251 plant specimens collected in Missouri's state parks and historic sites and is located at the Department of Natural Resource's main office in Jefferson City.

The establishment of the herbarium and accrual of the plant specimens was no easy task. In 1980, the first herbarium case was hand made of wood and contained about 800 specimens I collected from Johnson's Shut-Ins State Park. Today, the herbarium consists of five standard metal cases that protect over 5,200 specimens. In addition, the herbarium label data for each specimen is recorded on computer.

This storehouse of plant data represents the most recent collection efforts of many persons we know professionally and personally. The foundation of the herbarium consists of collections by masters study students. Studying under Dr. Paul Redfearn and Dr. Wallace Weber of Southwest Missouri State University were Gordon Maupin (Flora of Montauk State Park) and Kathy Hornberger (Flora of Roaring River State Park). Dr. Robert H. Mohlenbrock of Southern Illinois University gave us Mary Kay Solecki (Hawn State Park), Wanda Oskins Doolen (Big Oak Tree State Park), and myself (Johnson's Shut-Ins State Park).

State park naturalists continue to contribute specimens: Doug Ladd is nearing completion of a comprehensive flora for Bennett Spring, Bruce Schuette is now concentrating on sedge collections at Cuivre River State Park (generally meaning he has completed the easy identifications). Other contributing naturalists include Larry Larson (Prairie State Park), Merle Rogers (Roaring River State Park), Tom Nagel and Mike Skinner (Lake of the Ozarks State Park), Dan Drees (Meramec State Park), Dave Bradford (Babler State Park), Steve Schneider (Thousand Hills State Park), and Ron Mullikin (St. Francois State Park).

Many of you are to be thanked for your continued efforts to add to the lists of state park floras: Dr. David Castaner, Dr. Otto Ohmart, Dr. Robert Mohlenbrock, Dr. Marshall Crosby, Art Christ, Father James Sullivan, and many, many others.

¹Department of Natural Resources, P. O. Box 176, Jefferson City, MO 65102.

There comes to bear a great deal of toil and persistence in caring for incoming herbarium specimens. In less than four years, we reached the 5,000 specimen goal needed to attain international status in the Index Herbariorum. Beseiged by some 2,000+ specimens, it became necessary to find someone to help us. That someone, Jay Raveill, proved to possess the qualities and characteristics needed to care for our herbarium and push us over the 5,000 mark. We thank him for his invaluable expertise.

Finally, I'm sure that much of the momentum needed to help inventory plants on state parks was generated through the birth and interest of the Missouri Native Plant Society. We have witnessed in recent years the exciting discoveries of county records, state records, and sites for many rare or endangered plants in the forests, savannas, prairies, and glades in state parks.

I'm sure many more discoveries await those of you willing to investigate those yet explored such as Ha Ha Tonka, Pershing, Prairie, and Grand Gulf State Parks. Your contributions, as always, are respectfully welcomed.

News and Notes

Missouri-Illinois Reference Collection at MO

After several years of work by various dedicated volunteers and students, the MO-ILL reference collection has been completed. It is housed in the Herbarium of the Missouri Botanical Garden, St. Louis. A representative specimen of each species cited by Julian Steyermark in his Flora of Missouri (1963) has been pulled for each state, and put in the collection alphabetically by family for easy reference. Many of the specimens included are Steyermark collections. The reference collection is available to students, researchers and amateur botanists for identification and to familiarize themselves with the area flora.

MO also has a reference collection of rare and endangered species.

A Letter of Thanks

"On August 7 the voters of Missouri enacted by majority vote Constitutional Amendment No. 2. From any perspective this has to be considered a historic occasion. This vote will ensure an adequate level of operational funding for state parks starting in fiscal year 1986, July 1985.

"As you are aware the campaign to pass the amendment involved the toil and dedication of hundreds of people. One of those people was you. Those of us in state parks will never forget the debt that Missouri owes to your efforts and the efforts of hundreds of others.

"We in state parks feel that the best way we can show our gratitude will be to live up to the confidence that Missourians have placed in us to make the state park system in Missouri the best run in the nation. This is our pledge."

--John Karel
Director, Division of Parks
and Historic Preservation

Books Available

Paul Redfearn's Mosses of the Interior Highlands of North America (1972) has just been reprinted in an updated and corrected version and is available for \$15.70, postpaid from the Missouri Botanical Garden. The Garden also stocks other selected botanical titles, such as Steyermark's Flora of Missouri and Lawrence's Taxonomy of Vascular Plants. Send orders to or request a complete listing from Department Eleven, Missouri Botanical Garden, P. O. Box 299, St. Louis, MO 63166-0299.

Behind the Scenes, the recollections of Cora Steyermark, who accompanied Julian Steyermark on hundreds of trips over thousands of miles of Missouri highways and back roads while he collected plants and information for his monumental Flora of Missouri, has just been published by the Garden. It is softbound, 168 pages long, and costs \$6.50, including postage.

News from the Missouri Botanical Garden Library

Julian Steyermark's field books and annotated maps are the most important source of information for protecting endangered flora in Missouri. Gary Reese, coordinator of the Department of Conservation's program for identifying locations of endangered plant species, wished to microfilm the maps so that regional coordinators would not have to come to the Garden each time they needed to find a location. These maps show sites of Missouri plants collected by Dr. Steyermark from 1927 through the 1950s.

The process of microfilming was expedited by three volunteers who prepared the maps for filming and also in the process provided conservation of the maps themselves. As a result of the work of Patricia Grace and Ted Ruger, temporary volunteers, and Herb Bueltmann, a regular volunteer in the Archives, these microfilms are now available for use by the Conservation Department regional coordinators.

By documenting sites the Conservation Department has the power to prevent development which might threaten extinction of a rare species. Joanna Turner is now adding to the accessibility of this documentation by sorting Missouri photographs from Steyermark's collection.

--Barbara Mykrantz, c/o Library, Missouri Botanical Garden.

More of Missouri's Disappearing Prairie Preserved

--from the St. Louis Post-Dispatch

Joseph and Virginia Rinehart of Nevada, MO, have donated a ten-acre tract containing a five-acre oxbow lake, called Backbone Lake, to the Nature Conservancy, a national conservation organization. The property will become part of the larger Marmaton River Bottoms Wet Prairie Preserve. The preserve is near Nevada, about 250 miles southwest of St. Louis. It will be named the "Maude Hays Rinehart Addition" to commemorate Rinehart's former wife, who is deceased, a spokesman said. The preserve, which now encompasses 305.5 acres, safeguards a sample of the wet prairie ecosystem that once was widespread. Less than 1,000 acres of wet prairie remain in Missouri. The Marmaton River Bottoms is the finest example of wet prairie in Missouri, the Nature Conservancy spokesman said. The Nature Conservancy is devoted to the protection of natural areas.

News of MONPS Members

--Published in the Missouri Botanical Garden Bulletin (Vol. 72, Number 6, 1984)

Dr. Paul L. Redfearn, Jr., a research associate at the Garden and Professor of Botany at Southwest Missouri State University, recently returned from an expedition to study mosses (bryophytes) in the Yunnan Province of China. While the results of his studies will not be available for some time, Dr. Redfearn did comment that he had a difficult time collecting specimens because of the scarcity of uncut forests in southwestern China due to severe overcrowding. "What we saw in China is what we will see in the United States if we don't do something to control our forests," he said.

This was Dr. Redfearn's second expedition to China in as many years. Next year the Chinese government will send one or two botanists to the U.S. to study at the Missouri Botanical Garden. It is hoped that the relationships Dr. Redfearn has set up will lead to the Garden becoming a center for the study of Asian bryophytes.

& & &

Friends of Edgar Denison have set up a Fund for Study of Missouri Plants in honor of his 80th birthday, which was August 31. This fund will be administered by the Garden and will be available to students of the Missouri flora who need financial assistance for travel to the field.

Mr. Denison is well known as the author of "Missouri Wildflowers," which was published by the Missouri Department of Conservation in 1972. He was born in Germany and has lived in the St. Louis area for many years. Although professionally he was a cost analyst (now retired) for Union Electric Company, he is familiar to Garden members for his expertise as a naturalist. His many activities include bird watching, rock and mineral collecting, and wildflowers taxonomy, photography, and painting. Exhibits of his wildflower art have been displayed from time to time in the Lehmann Building. He is active in the Webster Groves Nature Study Society and the Missouri Native Plant Society, and he frequently leads tours to Shaw Arboretum and Tyson Research Center. His enthusiasm and knowledge have stimulated many others to learn more about the native Missouri flora, and this fund is an expression of appreciation and thanks for this.

Students interested in applying for travel funds should submit a short statement giving their intended destination, an overview of what is botanically interesting about the area or what plants they might expect to find there, and round-trip mileage, to N. R. Morin, Administrative Curator, Botany Department, Missouri Botanical Garden, P. O. Box 299, St. Louis, Missouri 63166.

Missouri Botanical County Records

TAXON	MAPS	COUNTY	COLLECTOR	HERBARIUM
Equisetum arvense	0010	St. Francois	05/22/81 Orzell 287	MO
Equisetum arvense	0010	Shannon	05/27/81 Orzell 315	MO
Equisetum arvense	0010	Lafayette	09/17/82 DeLozier 507	UMKC
Equisetum kansanum	0011	Nodaway	06/07/79 Castaner & Brown 5755	WARM
Equisetum laevigatum	0012	Atchison	06/12/76 Sprague 31	NMSU
Equisetum laevigatum	0012	Nodaway	09/14/76 Mork 30	NMSU
Equisetum hyemale var. elatum	0013	Johnson	07/06/72 Castaner 2441	WARM
Equisetum hyemale	0013	Andrew	09/15/82 DeLozier 480	UMKC
Equisetum hyemale	0013	Ray	08/28/82 DeLozier 191	UMKC
Equisetum hyemale	0013	St. Francois	05/22/81 Orzell 282	MO
Equisetum hyemale	0013	Nodaway	10/21/79 Brunson	NMSU
Botrychium dissectum var. obliquum	0014	Johnson	10/04/75 Castaner 4363	WARM
Botrychium dissectum var. dissectum	0014	Jefferson	08/15/80 Orzell 232	MO
Azolla mexicana	0019	Platte	08/10/82 Castaner 7252	WARM
Azolla mexicana	0019	St. Charles	07/30/81 Orzell 242	MO
Osmunda cinnamomea	0024	Shannon	05/03/81 Orzell 253	MO
Pellaea atropurpurea	0030	Johnson	10/15/76 Young 125	WARM
Notholaena dealbata	0031	Pettis	10/03/82 DeLozier 656	UMKC
Onoclea sensibilis	0039	Lafayette	05/01/76 Boeschen 64	WARM
Asplenium trichomanes	0043	Taney	04/13/74 Johnson 411	WARM
Camptosorus rhizophyllus	0049	Johnson	09/15/16 Stevens	WARM
Camptosorus rhizophyllus f. auriculatum *	0049	Franklin	03/14/81 Orzell 234	MO
Athyrium thelypteroides	0051	Sullivan	10/03/70 Conrad 5760	NEMO
Athyrium thelypteroides	0051	Reynolds	07/30/82 Orzell 794	MO
Typha angustifolia	0070	Atchison	06/20/76 Dixon 50	NMSU
Alisma plantago-aquatica	0090	Nodaway	07/30/73 Holtz 61	NMSU
Sagittaria montevidensis	0094	Mercer	09/02/76 Smith 5	NMSU
Sagittaria graminea	0096	Vernon	05/28/82 Solecki 973	SMS
Festuca elatior	0120	St. Francois	05/22/81 Orzell 285	MO

TAXON	MAPS	COUNTY	COLLECTOR	HERBARIUM
<i>Poa compressa</i>	0133	Shannon	05/29/82	Orzell 521 MO
<i>Poa pratensis</i>	0134	Phelps	05/03/83	Solecki 1008 SMS
<i>Poa pratensis</i>	0134	St. Francois	05/23/82	Orzell 491 MO
<i>Poa bulbosa</i>	0139	Barry	05/10/82	Christ MO
<i>Diplachne fascicularis</i>	0156	Mississippi	08/02/79	Christ 19-8-1 MO
<i>Dactylis glomerata</i>	0164	Shannon	06/03/82	Orzell 545 MO
<i>Hordeum pusillum</i>	0189	New Madrid	05/05/79	Wilkerson b8-193 WARM
<i>Stipa spartea</i>	0245	St. Clair	06/07/77	Christ 19-46-1 MO
<i>Eleusine indica</i>	0256	Ray	08/18/82	DeLozier 64 UMKC
<i>Chloris virgata</i>	0262	Clay	10/05/82	DeLozier 702 UMKC
<i>Bouteloua curtipendula</i>	0264	Cass	09/14/82	Henderson 82-183 UMKC
<i>Eriochloa gracilis</i> var. <i>gracilis</i>	0283	Pemiscot	08/01/79	Christ 19-66-2 MO
<i>Paspalum pubiflorum</i>	0289	Henry	09/07/82	DeLozier 347 UMKC
<i>Paspalum pubiflorum</i>	0289	Pettis	10/03/82	DeLozier 666 UMKC
<i>Paspalum pubiflorum</i>	0289	Ray	08/28/82	DeLozier 195 UMKC
<i>Paspalum ciliatifolium</i>	0291	Ray	09/05/82	DeLozier 293 UMKC
<i>Setaria glauca</i>	0340	Andrew	09/15/82	DeLozier 475 UMKC
<i>Setaria glauca</i>	0340	Douglas	10/26/82	DeLozier 766 UMKC
<i>Setaria glauca</i>	0340	Henry	09/07/82	DeLozier 350 UMKC
<i>Setaria glauca</i>	0340	Ray	08/21/82	DeLozier 143 UMKC
<i>Setaria glauca</i>	0340	St. Clair	10/26/82	DeLozier 750 UMKC
<i>Setaria glauca</i>	0340	Pettis	10/03/82	DeLozier 697 UMKC
<i>Setaria glauca</i>	0340	Platte	09/11/82	DeLozier 382 UMKC
<i>Setaria viridis</i>	0343	Pettis	10/03/82	DeLozier 665 UMKC
<i>Setaria faberii</i>	0344	Greene	10/26/82	DeLozier 755 UMKC
<i>Setaria faberii</i>	0344	Ozark	10/27/82	DeLozier 782 UMKC
<i>Setaria faberii</i>	0344	St. Clair	10/26/82	DeLozier 752 UMKC
<i>Setaria faberii</i>	0344	Ray	08/21/82	DeLozier 106 UMKC

TAXON	MAPS	COUNTY	COLLECTOR		HERBARIUM
<i>Andropogon scoparius</i>	0352	St. Francois	09/05/81	Orzell 385	MO
<i>Andropogon gerardii</i>	0353	Andrew	09/15/82	Delozier 491	UMKC
<i>Andropogon gerardii</i>	0353	St. Francois	09/05/81	Orzell 394	MO
<i>Andropogon virginicus</i>	0355	Clay	09/29/82	Delozier 586	UMKC
<i>Andropogon virginicus</i>	0355	Jackson	10/15/82	Delozier 730	UMKC
<i>Andropogon elliotii</i> var. <i>elliotii</i>	0356	Stoddard	09/16/81	Christ	MO
<i>Sorghum halepense</i>	0358	Ray	09/05/82	Delozier 278	UMKC
<i>Sorghastrum nutans</i>	0360	Greene	10/28/82	Delozier 786	UMKC
<i>Cyperus strigosus</i>	0379	St. Francois	09/05/81	Orzell 390	MO
<i>Dulichium arundinaceum</i>	0389	Madison	06/17/82	Orzell 593	MO
<i>Eleocharis smallii</i>	0398	Vernon	05/10/82	Solecki	SMS
<i>Eleocharis calva</i>	0400	Shannon	05/03/81	Orzell 256	MO
<i>Eleocharis tenuis</i>	0402	St. Francois	05/22/81	Orzell 266	MO
<i>Bulbostylis capillaris</i>	0403	Randolph	06/11/77	Gunier	NEMO
<i>Fimbristylis caroliniana</i>	0404	Vernon	05/11/82	Solecki 957	SMS
<i>Oxalis dillenii</i>	0410	Gentry	05/28/76	Grace 42	NMSU
<i>Scirpus lineatus</i>	0424	Madison	06/17/82	Orzell 846	MO
<i>Scirpus lineatus</i>	0424	St. Francois	05/23/82	Orzell 489	MO
<i>Scleria verticillata</i>	0442	Shannon	08/04/75	Christ 20-10-7	MO
<i>Scleria verticillata</i>	0442	St. Francois	08/09/81	Orzell 367	MO
<i>Carex retroflexa</i>	0446	St. Clair	09/02/82	Solecki 1003	SMS
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Reynolds	06/24/72	Castaner 2422	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Macon	05/24/73	Castaner 2845	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Cooper	05/24/73	Castaner 2894	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Henry	05/11/74	Castaner 3529	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Cole	05/22/74	Castaner 3711	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Lafayette	06/01/74	Castaner 4711	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Moniteau	05/30/78	Castaner 5058	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Dallas	06/01/78	Castaner 5161	WARM
<i>Carex cephalophora</i> var. <i>cephalophora</i>	0449	Pettis	05/16/81	Castaner 6305	WARM

TAXON	MAP#	COUNTY	COLLECTOR	HERBARIUM
Carex cephalophora var. cephalophora	0449	St. Clair	06/06/81 Castaner 6478	WARM
Carex cephalophora var. cephalophora	0449	Pulaski	06/13/81 Castaner 6523	WARM
Carex cephalophora var. cephalophora	0449	Washington	06/14/81 Castaner 6584	WARM
Carex cephalophora var. cephalophora	0449	Perry	06/13/82 Castaner 7075	WARM
Carex cephalophora var. cephalophora	0449	Bollinger	06/13/82 Castaner 7059	WARM
Carex cephalophora var. cephalophora	0449	Johnson	07/01/69 Castaner 119	WARM
Carex arkansana	0451	Vernon	05/11/82 Solecki 952	SMS
Carex muhlenbergii var. enervis	0452	St. Clair	09/02/82 Solecki 1005	SMS
Carex vulpinoidea	0456	Vernon	05/28/82 Solecki 971	SMS
Carex vulpinoidea	0456	St. Francois	05/23/82 Orzell 505	MO
Carex annectans	0457	Vernon	05/27/82 Solecki 964	SMS
Carex stipata	0461	Vernon	06/02/82 Solecki 992	SMS
Carex crux-corvi	0463	Jefferson	07/14/72 Christ 20-11-18	MO
Carex suberecta	0475	St. Francois	05/22/81 Orzell 278	MO
Carex bicknellii	0478	Vernon	05/27/82 Solecki 965	SMS
Carex leptalea	0481	St. Francois	05/22/81 Orzell 269	MO
Carex meadia	0493	St. Francois	05/22/81 Orzell 264	MO
Carex granularis var. haleana	0502	St. Francois	06/24/82 Christ	MO
Carex amphibola var. turgida	0508	Adair	05/10/69 Conrad 5384	NEMO
Carex cherokeensis	0514	Taney	06/01/76 Christ 20-11-72	MO
Carex virescens	0515	Iron	05/31/74 Christ 20-11-70	MO
Carex bushii	0519	St. Clair	08/30/82 Solecki 1002	SMS
Carex bushii	0519	Vernon	05/16/82 Solecki 960	SMS
Carex bushii	0519	Taney	05/13/82 Christ	MO
Carex lanuginosa	0520	Vernon	05/11/82 Solecki 954	SMS
Carex lanuginosa	0520	St. Francois	05/22/81 Orzell 268	MO
Carex lanuginosa	0520	Madison	06/17/82 Orzell 582	MO
Carex shortiana	0522	St. Clair	09/02/82 Solecki 1004	SMS
Carex buxbaumii f. buxbaumii	0524	Nodaway	05/18/79 Christ 20-11-82a	MO

TAXON	MAP#	COUNTY	COLLECTOR	HERBARIUM
Carex stricta var. strictior	0529	St. Francois	05/23/82 Orzell 496	MO
Carex stricta var. strictior	0529	Shannon	05/29/82 Orzell 518	MO
Carex laeviconica	0539	Holt	06/13/78 Christ 20-11-97	MO
Carex frankii	0541	Madison	06/14/81 Castaner 6548	WARM
Carex frankii	0541	Reynolds	06/24/72 Castaner 2419	WARM
Carex frankii	0541	Iron	06/13/82 Castaner 7039	WARM
Carex frankii	0541	Carter	07/19/82 Castaner 7158	WARM
Carex frankii	0541	Oregon	06/19/82 Castaner 7170	WARM
Carex frankii	0541	Texas	06/18/82 Castaner 7127	WARM
Carex frankii	0541	Ray	08/18/82 Delozier 37	UMKC
Carex vesicaria var. monile	0544	Shannon	05/15/75 Christ 20-11-102	MO
Tradescantia ozarkana	0568	Christian	06/04/76 Christ 33-1-2	MO
Tradescantia ohiensis	0572	Atchison	06/15/76 Dixon 31	NMSU
Commelina communis	0575	Andrew	09/15/82 Delozier 439	UMKC
Commelina communis	0575	Ray	08/21/82 Delozier 140	UMKC
Commelina erecta	0579	Nodaway	09/24/77 Burton	NMSU
Heteranthera limosa	0583	Butler	08/03/78 Christ 34-3-2	MO
Juncus effusus var. solutus	0585	Vernon	5/28/82 Solecki 968	SMS
Juncus effusus var. solutus	0585	St. Francois	05/22/81 Orzell 284	MO
Juncus interior	0591	Vernon	05/28/82 Solecki 967	SMS
Juncus subcaudatus	0596	Shannon	09/12/81 Orzell 443	MO
Juncus nodatus	0600	Shannon	07/02/82 Orzell 688	MO
Juncus torreyi	0601	Jefferson	07/19/78 Christ 36-1-17	MO
Juncus acuminatus	0602	Madison	06/17/82 Orzell 842	MO
Hemerocallis fulva	0626	Atchison	06/11/76 Dixon 20	NMSU
Camassia angusta	0632	Barton	06/07/82 Solecki 998	SMS
Asparagus officinalis	0639	Henry	10/26/82 Delozier 749	UMKC
Asparagus officinalis	0639	Lafayette	09/17/82 Delozier 516	UMKC
Asparagus officinalis	0639	Platte	10/14/82 Delozier 725	UMKC

TAXON	MAPS	COUNTY	COLLECTOR	HERBARIUM
<i>Polygonatum canaliculatum</i>	0643	Henry	09/07/82 Delozier 360	UMKC
<i>Trillium nivale</i>	0649	Crawford	03/12/76 Christ 38-21-5	MO
<i>Smilax herbacea</i>	0652	Ray	09/05/82 Delozier 269	UMKC
<i>Nemastylis geminiflora</i>	0674	Vernon	06/04/82 Solecki 997	SMS
<i>Belamcanda chinensis</i>	0676	Ray	08/18/82 Delozier 79	UMKC
<i>Sisyrinchium campestre</i>	0678	St. Francois	05/23/82 Orzell 503	MO
<i>Sisyrinchium bermudiana</i>	0679	Ray	08/18/82 Delozier 83	UMKC
<i>Cypripedium calceolus</i> var. <i>pubescens</i>	0682	St. Francois	05/23/82 Orzell 499	MO
<i>Habenaria lacera</i>	0689	Madison	06/17/82 Orzell 587	MO
<i>Habenaria lacera</i>	0689	Reynolds	06/30/82 Orzell 634B	MO
<i>Calopogon pulchellus</i>	0697	St. Francois	08/16/71 Christ 50-7-1	MO
<i>Spiranthes lucida</i>	0704	Jefferson	06/08/73 Christ 50-9-6	MO
<i>Liparis loeselii</i>	0704	Carter	06/20/79 Christ 50-13-2	MO
<i>Corallorhiza wisteriana</i>	0707	St. Clair	04/30/82 Solecki 950	SMS
<i>Corallorhiza odontorhiza</i>	0708	Clay	10/02/82 Delozier 654	UMKC
<i>Corallorhiza odontorhiza</i>	0708	Ray	09/25/82 Delozier 552	UMKC
<i>Salix caroliniana</i>	0716	Ray	08/18/82 Delozier 3	UMKC
<i>Populus alba</i>	0729	Clay	08/22/81 Williamson	UMKC
<i>Ulmus rubra</i>	0781	Ray	08/18/82 Delozier 84	UMKC
<i>Humulus lupulus</i>	0792	Henry	09/07/82 Delozier 368	UMKC
<i>Polygonum prolificum</i>	0819	Vernon	06/17/82 Solecki 997	SMS
<i>Polygonum ramosissimum</i>	0820	Vernon	09/08/82 Solecki 1006	SMS
<i>Polygonum aviculare</i>	0823	Lafayette	09/17/82 Delozier 495	UMKC
<i>Polygonum pennsylvanicum</i>	0829	Andrew	08/10/76 Nelson 56	NMSU
<i>Polygonum persicaria</i>	0833	Atchison	09/10/76 Grace 30	NMSU
<i>Polygonum punctatum</i>	0834	Andrew	09/15/82 Delozier 456	UMKC
<i>Polygonum convolvulus</i>	0839	Mercer	09/19/76 Smith 28	NMSU
<i>Polygonum scandens</i>	0840	Buchanan	09/11/82 Delozier 389	UMKC
<i>Polygonum scandens</i>	0840	Worth	09/09/76 Combs 36	NMSU
<i>Polygonum cuspidatum</i>	0841	St. Genevieve	05/23/81 Orzell 240	MO

TAXON	MAP#	COUNTY	COLLECTOR	HERBARIUM
<i>Chenopodium standleyanum</i>	0856	Clinton	06/03/80 Raveill	NMSU
<i>Chenopodium gigantospermum</i>	0857	Atchison	10/03/76 Hawkins 18	NMSU
<i>Chenopodium album</i>	0860	Andrew	09/15/82 Delozier 423	UMKC
<i>Chenopodium album</i>	0860	Clay	09/29/82 Delozier 580	UMKC
<i>Chenopodium album</i>	0860	Douglas	10/26/82 Delozier 356	UMKC
<i>Chenopodium album</i>	0860	Henry	09/07/82 Delozier 356	UMKC
<i>Chenopodium album</i>	0860	Pettis	10/03/82 Delozier 678	UMKC
<i>Chenopodium album</i>	0860	Atchison	10/03/76 Hawkins 27	NMSU
<i>Chenopodium album</i>	0860	Harrison	09/28/75 Martin	NMSU
<i>Celosia argentea</i>	0875	Platte	10/14/82 Delozier 720	UMKC
<i>Amaranthus hybridus</i>	0882	Ray	10/01/82 Delozier 607	UMKC
<i>Amaranthus retroflexus</i>	0883	Andrew	08/05/76 Nelson 36	NMSU
<i>Amaranthus retroflexus</i>	0883	Nodaway	09/20/79 Herrman 22	NMSU
<i>Froelichia gracilis</i>	0890	Nodaway	08/11/38 Singleton 226b	NMSU
<i>Mirabilis hirsuta</i>	0892	Worth	06/13/76 Mayes 12	NMSU
<i>Portulaca oleracea</i>	0900	Andrew	09/15/82 Delozier 477	UMKC
<i>Geocarpon minimum</i>	0909	Lawrence	04/22/80 Christ 87-2-1	MO
<i>Stellaria media</i>	0918	Nodaway	05/10/80 Raveill	NMSU
<i>Holosteum umbellatum</i>	0930	Jefferson	04/13/70 Christ 87-9-1	MO
<i>Lychnis alba</i>	0933	Nodaway	09/18/79 Jackson 45	NMSU
<i>Dianthus armeria</i>	0949	Gentry	06/18/76 Grace 26	NMSU
<i>Delphinium tricornes</i>	0972	Gentry	05/03/76 Grace 6	NMSU
<i>Ranunculus septentrionalis</i>	0991	Butler	04/24/82 Brink 63	WARM
<i>Clematis dioscoreifolia</i>	1005	Jackson	09/30/82 Delozier 588	UMKC
<i>Stylophorum diphyllum</i>	1023	Franklin	04/18/81 Drzell 236	MO
<i>Lepidium campestre</i>	1049	Nodaway	05/04/77 Wilmes 10	NMSU
<i>Rorippa sylvestris</i>	1086	Jackson	06/05/79 Raveill	NMSU
<i>Rorippa sinuata</i>	1087	Vernon	05/11/82 Solecki 956	SMS
<i>Chorisporea tenella</i>	1093	Ray	05/07/78 Kohl 66	WARM

TAXON	MAP#	COUNTY	COLLECTOR	HERBARIUM
<i>Hesperis matronalis</i>	1094	Nodaway	06/10/76 Davis 30	NMSU
<i>Erysimum inconspicuum</i>	1098	Crawford	07/07/76 Christ 105-28-4	MO
<i>Sisymbrium officinale</i>	1099	Mercer	10/19/76 Smith 50	NMSU
<i>Descurainia sophia</i>	1106	Holt	06/13/78 Christ 105-32-2	MO
<i>Polanisia dodecandra</i>	1109	Ray	08/18/82 Delozier 477	UMKC
<i>Sedum sarmentosum</i>	1113	Jackson	08/11/82 Williamson	UMKC
<i>Fragaria virginiana</i>	1205	Wayne	04/24/82 Traxler 42	WARM
<i>Potentilla recta</i>	1215	Atchison	06/19/76 Dixon 43	NMSU
<i>Potentilla arguta</i>	1216	Cedar	06/06/77 Christ 126-11-8	MO
<i>Filipendula rubra</i>	1217	St. Francois	07/28/76 Christ 126-12-1	MO
<i>Rubus pensilvanicus</i>	1235	Clinton	06/03/80 Raveill	NMSU
<i>Prunus americana</i>	1259	Livingston	05/26/56 Steyermark 81775	UMKC
<i>Prunus serotina</i>	1266	Andrew	08/08/76 Nelson 45	NMSU
<i>Cassia marilandica</i>	1276	Ray	08/18/82 Delozier 50	UMKC
<i>Trifolium pratense</i>	1289	Worth	06/13/76 Mayes 19	NMSU
<i>Trifolium repens</i>	1293	Atchison	09/19/59 Straub	NMSU
<i>Medicago sativa</i>	1301	Pettis	10/03/82 Delozier 696	UMKC
<i>Medicago sativa</i>	1301	Worth	09/03/76 Combs 48	NMSU
<i>Melilotus albus</i>	1306	St. Francois	06/24/81 Orzell 327	MO
<i>Lotus corniculatus</i>	1308	Jackson	08/22/82 Delozier 163	UMKC
<i>Lotus corniculatus</i>	1308	Lafayette	08/09/81 Williamson	UMKC
<i>Lotus corniculatus</i>	1308	Ray	08/18/82 Delozier 90	UMKC
<i>Lotus corniculatus</i>	1308	Atchison	06/24/76 Dixon 53	NMSU
<i>Lotus corniculatus</i>	1308	Worth	06/13/76 Combs 26	NMSU
<i>Petalostemon candidum</i>	1318	St. Francois	06/24/82 Orzell 620	MO
<i>Petalostemon purpureum</i>	1319	St. Francois	06/24/82 Orzell 621	MO
<i>Sesbania exaltata</i>	1324	Stoddard	08/09/72 Christ 128-22-1	MO
<i>Coronillia varia</i>	1335	Holt	06/14/76 Dixon 28	NMSU
<i>Desmodium paniculatum</i>	1351	Reynolds	08/05/82 Orzell 844	MO

TAXON	MAP#	COUNTY	COLLECTOR		HERBARIUM
<i>Lespedeza capitata</i>	1364	North	09/09/76	Combs 26	NMSU
<i>Lespedeza striata</i>	1367	Lafayette	08/18/81	Williamson	UMKC
<i>Vicia grandiflora</i>	1371	Butler	04/24/82	Brink 78	WARM
<i>Vicia sativa</i>	1372	Butler	04/24/82	Brink 80	WARM
<i>Vicia villosa</i>	1378	Butler	04/24/82	Brink 68	WARM
<i>Phaseolus polystachios</i>	1389	Reynolds	08/16/81	Orzell 379	MO
<i>Strophostyles helvola</i>	1393	Lafayette	08/23/81	Williamson	UMKC
<i>Glycine max</i>	1396	Ray	08/18/82	Delozier 53	UMKC
<i>Amphicarpa bracteata</i>	1398	Ray	08/18/82	Delozier 94	UMKC
<i>Pueraria lobata</i>	1400	Jackson	09/21/82	Henderson 82-184	UMKC
<i>Oxalis stricta</i>	1411	Atchison	06/19/76	Dixon 45	NMSU
<i>Geranium molle</i>	1416	Barry	05/13/74	Christ 129-1-5	MO
<i>Ptelea trifoliata</i>	1421	Johnson	08/06/78	Krohn 118	WARM
<i>Polygala sanguinea</i>	1426	Ray	10/01/82	Delozier 642	UMKC
<i>Croton capitatus</i>	1432	Nodaway	10/10/79	Herrman 34	NMSU
<i>Acalypha ostryaefolia</i>	1437	Cass	09/14/82	Henderson 82-174	UMKC
<i>Acalypha ostryaefolia</i>	1437	Jackson	08/18/79	Raveill	NMSU
<i>Acalypha rhomboidea</i>	1438	Platte	10/14/82	Delozier 719	UMKC
<i>Acalypha virginica</i>	1439	Andrew	09/15/82	Delozier 442	UMKC
<i>Acalypha virginica</i>	1439	Buchanan	09/11/82	Delozier 383	UMKC
<i>Euphorbia heterophylla</i>	1445	Ray	08/18/82	Delozier 6	UMKC
<i>Euphorbia heterophylla</i>	1445	Worth	09/09/76	Combs 15	NMSU
<i>Euphorbia cyparissias</i>	1449	Phelps	05/03/83	Solecki 1007	SMS
<i>Euphorbia supina</i>	1458	Buchanan	09/11/82	Delozier 385	UMKC
<i>Euphorbia supina</i>	1458	Holt	09/11/82	Delozier 405	UMKC
<i>Euphorbia supina</i>	1458	Ray	08/18/82	Delozier 87	UMKC
<i>Euphorbia supina</i>	1458	Atchison	06/08/78	Orht 1	NMSU
<i>Floerkea proserpinacoides</i>	1466	Lincoln	05/03/78	Christ 152-1-1	MO
<i>Floerkea proserpinacoides</i>	1466	Pike	05/17/78	Christ 152-1-1a	MO

TAXON	MAP#	COUNTY	COLLECTOR	HERBARIUM
<i>Acer nigrum</i>	1483	Nodaway	09/05/79 Chambers 20	NMSU
<i>Impatiens pallida</i>	1491	Lafayette	09/17/82 Delozier 510	UMKC
<i>Malva neglecta</i>	1518	Mercer	09/19/76 Smith 23	NMSU
<i>Sida spinosa</i>	1527	Ray	08/18/82 Delozier 54	UMKC
<i>Hibiscus trionum</i>	1534	Ray	09/05/82 Delozier 249	UMKC
<i>Hypericum punctatum</i>	1538	Ray	08/21/82 Delozier 131	UMKC
<i>Helianthemum bicknellii</i>	1552	Douglas	06/04/76 Christ 193-1-1	MO
<i>Viola viarum</i>	1564	Butler	04/24/82 Brink 66	WARM
<i>Mentzelia albescens</i>	1574	Crawford	07/07/76 Christ 206-1-2	MO
<i>Opuntia compressa</i>	1575	Ray	08/18/82 Delozier 103	UMKC
<i>Lythrum alatum</i>	1584	Ray	08/28/82 Delozier 196	UMKC
<i>Lythrum salicaria</i>	1585	Lafayette	09/17/82 Delozier 548	UMKC
<i>Oenothera speciosa</i>	1613	Ray	08/13/82 Delozier 63	UMKC
<i>Oenothera speciosa</i>	1613	Clinton	06/03/80 Raveill	NMSU
<i>Myriophyllum pinnatum</i>	1623	Vernon	05/28/82 Solecki 970	SMS
<i>Osmorhiza longistylis</i>	1641	Nodaway	05/25/78 Barksdale 9	NMSU
<i>Osmorhiza longistylis</i>	1641	Gentry	06/12/76 Grace 44	NMSU
<i>Torilis japonica</i>	1642	Ray	08/18/82 Delozier 18	UMKC
<i>Torilis japonica</i>	1642	Nodaway	06/25/78 Terry	NMSU
<i>Conium maculatum</i>	1646	St. Francois	05/23/82 Orzell 501	MO
<i>Ptilimnium costatum</i>	1664	Shannon	09/13/81 Orzell 445	MO
<i>Lomatium foeniculaceum</i>	1676	St. Clair	05/06/78 Russum 16	WARM
<i>Pastinaca sativa</i>	1677	Atchison	06/14/76 Dixon 30	NMSU
<i>Pastinaca sativa</i>	1677	Mercer	09/08/76 Smith 8	NMSU
<i>Pastinaca sativa</i>	1677	Worth	06/13/76 Mayes 11	NMSU
<i>Daucus carota</i>	1679	Douglas	10/26/82 Delozier 764	UMKC
<i>Nyssa sylvatica</i> var. <i>sylvatica</i>	1688	Stoddard	09/24/80 Christ 229-2-20	MO
<i>Anagallis arvensis</i>	1707	Pettis	10/03/82 Delozier 664	UMKC
<i>Diospyros virginiana</i>	1713	Nodaway	06/05/44 NO coll.	NMSU
<i>Sabatia angularis</i> f. <i>albiflorus</i>	1727	Reynolds	07/21/82 Orzell 758	MO

TAXON	MAP#	COUNTY	COLLECTOR		HERBARIUM
<i>Gentiana quinquefolia</i> var. <i>occidentalis</i>	1732	St. Francois	09/26/81	Orzell 475	MO
<i>Vinca minor</i>	1745	Clinton	05/05/77	Burton	NMSU
<i>Apocynum sibiricum</i>	1750	Atchison	06/13/76	Dixon 46	NMSU
<i>Asclepias tuberosa</i>	1753	Worth	06/13/76	Mayes	NMSU
<i>Asclepias incarnata</i>	1755	St. Francois	08/09/81	Orzell 363	MO
<i>Asclepias hirtella</i>	1765	Ray	08/18/82	Delozier 19	UMKC
<i>Asclepias hirtella</i>	1765	Nodaway	07/19/60	No coll.	NMSU
<i>Convolvulus sepium</i>	1780	Atchison	10/07/59	Straub	NMSU
<i>Convolvulus arvensis</i>	1782	Ray	08/18/82	Delozier 100	UMKC
<i>Cuscuta campestris</i>	1787	Cass	09/14/82	Henderson 82-173	UMKC
<i>Phlox paniculata</i>	1801	Worth	09/09/76	Combs 32	NMSU
<i>Lithospermum incisum</i>	1825	Hickory	05/14/78	Russun 24	WARM
<i>Scutellaria parvula</i>	1862	Gentry	05/22/76	Brace	NMSU
<i>Nepeta cataria</i>	1866	Atchison	06/19/76	Dixon 41	NMSU
<i>Prunella vulgaris</i>	1869	Andrew	09/15/82	Delozier 488	UMKC
<i>Prunella vulgaris</i>	1869	Lafayette	08/23/81	Williamson	UMKC
<i>Prunella vulgaris</i>	1869	Pettis	10/03/82	Delozier 681	UMKC
<i>Prunella vulgaris</i> var. <i>lanceolata</i>	1869	St. Francois	08/09/81	Orzell 353	MO
<i>Physostegia angustifolia</i>	1871	St. Francois	08/09/81	Orzell 373	MO
<i>Leonurus cardiaca</i>	1874	Atchison	06/06/76	Dixon 10	NMSU
<i>Lamium amplexicaule</i>	1877	Atchison	06/11/76	Dixon 22	NMSU
<i>Lamium amplexicaule</i>	1877	Buchanan	04/11/63	Marcinko	NMSU
<i>Salvia azurea</i>	1883	Clay	10/01/82	Delozier 681	UMKC
<i>Salvia reflexa</i>	1884	Platte	10/14/82	Delozier 718	UMKC
<i>Blephilia hirsuta</i>	1894	Andrew	09/15/82	Delozier 428	UMKC
<i>Pycnanthemum pilosum</i>	1903	Ray	08/21/82	Delozier 122	UMKC
<i>Pycnanthemum muticum</i>	1904	Stoddard	08/09/72	Christ 254-22-5	MO
<i>Mentha arvensis</i>	1911	Ray	08/21/82	Delozier 134	UMKC
<i>Mentha piperita</i>	1913	St. Francois	08/09/81	Orzell 370	MO
<i>Perilla frutescens</i>	1916	Andrew	09/15/82	Delozier 468	UMKC
<i>Physalis heterophylla</i>	1931	Ray	08/18/82	Delozier 25	UMKC

TAXON	MAP#	COUNTY	COLLECTOR		HERBARIUM
Datura stramonium	1941	Dekalb	07/27/77	No coll.	NMSU
Datura stramonium	1941	Harrison	09/28/75	Martin	NMSU
Gratiola virginiana	1952	Vernon	05/28/82	Solecki 974	SMS
Mimulus ringens var. anthodes	1954	St. Francois	08/09/81	Orzell 357	MO
Mimulus alatus f. albiflorus	1955	Jefferson	08/15/80	Orzell 233	MO
Linaria vulgaris	1975	Atchison	06/18/76	Dixon 36	NMSU
Pedicularis lanceolata	2005	St. Francois	09/05/81	Orzell 383	MO
Castilleja coccinea f. lutescens	2006	Shannon	05/29/82	Orzell 520	MO
Campsis radicans	2009	Atchison	6/20/76	Dixon 49	NMSU
Catalpa speciosa	2012	Morgan	09/16/79	Moore 27	WARM
Plantago rugelii	2028	Lafayette	08/20/81	Williamson	UMKC
Plantago rugelii	2028	Ray	08/21/82	Delozier 138	UMKC
Plantago rugelii	2028	Atchison	06/24/76	Dixon 52	NMSU
Plantago lanceolata	2029	Ray	09/05/82	Delozier 310	UMKC
Plantago lanceolata	2029	Atchison	06/10/76	Dixon 18	NMSU
Houstonia nigricans	2060	Ray	10/01/82	Delozier 643	UMKC
Lonicera japonica	2064	Nodaway	10/02/76	Bure 9	NMSU
Dipsacus sylvestris	2088	Nodaway	07/20/78	Brommel	NMSU
Echinocystis lobata	2096	Pettis	10/03/83	Delozier 679	UMKC
Campanula rapunculoides	2098	Atchison	06/09/76	Dixon 13	NMSU
Campanula rapunculoides	2098	Nodaway	06/10/76	Davis 23	NMSU
Campanula rapunculoides	2098	Worth	06/13/76	Mayes 9	NMSU
Campanula aparinoides	2101	Reynolds	07/22/82	Orzell 769	MO
Lobelia inflata	2106	Pettis	10/03/82	Delozier 663	UMKC
Lobelia inflata	2106	Ray	08/21/82	Delozier 117	UMKC
Vernonia baldwini	2114	Ray	08/21/82	Delozier 110	UMKC
Eupatorium purpureum	2118	Nodaway	07/30/73	Holts 52	NMSU
Eupatorium altissimum	2119	Worth	09/09/76	Combs 27	NMSU
Eupatorium coelestinum	2127	St. Francois	09/26/81	Orzell 472	MO
Liatris pycnostachya f. hubrichtii	2132	St. Francois	08/09/81	Orzell 360	MO
Gutierrezia dracunculoides	2142	Webster	09/13/81	Christ	MO
Gutierrezia dracunculoides	2142	Taney	08/18/76	Christ 280-10-1	MO

TAXON	MAPS	COUNTY	COLLECTOR	HERBARIUM
<i>Solidago rugosa</i> var. <i>rugosa</i>	2161	Reynolds	09/11/81 Orzell 403	MO
<i>Solidago riddellii</i>	2166	Jefferson	09/28/77 Christ 280-13-22	MO
<i>Solidago riddellii</i>	2166	Madison	09/25/81 Orzell 467	MO
<i>Solidago graminifolia</i>	2169	Ray	10/01/82 Delozier 594	UMKC
<i>Aster azureus</i> var. <i>azureus</i> f. <i>laevicaulis</i>	2178	St. Francois	09/26/81 Orzell 471	MO
<i>Aster puniceus</i> var. <i>fimus</i> f. <i>lucidulous</i>	2185	St. Francois	09/26/81 Orzell 477	MO
<i>Aster praealtus</i>	2198	Shannon	08/31/82 Orzell 870	MO
<i>Aster simplex</i>	2200	Reynolds	09/11/81 Orzell 424	MO
<i>Erigeron annuus</i>	2207	Shannon	05/30/82 Orzell 534	MO
<i>Erigeron strigosus</i>	2208	Madison	06/17/82 Orzell 589	MO
<i>Ambrosia bidentata</i>	2223	Lafayette	09/17/82 Delozier 539	UMKC
<i>Ambrosia bidentata</i>	2223	Nodaway	09/26/79 Brunson 23	NMSU
<i>Xanthium chinense</i>	2231	Clay	09/29/82 Delozier 583	UMKC
<i>Silphium perfoliatum</i>	2240	St. Francois	05/23/82 Orzell 493	MO
<i>Parthenium integrifolium</i>	2248	Reynolds	07/30/82 Orzell 645	MO
<i>Helianthus annuus</i>	2268	Pettis	10/03/82 Delozier 690	UMKC
<i>Helianthus salicifolius</i>	2270	Taney	08/18/76 Christ 280-41-3	MO
<i>Verbesina alternifolia</i>	2287	Clay	09/29/82 Delozier 582	UMKC
<i>Bidens aristosa</i> var. <i>aristosa</i>	2304	Stoddard	09/15/81 Christ	MO
<i>Bidens aristosa</i> var. <i>fritcheyi</i>	2304	Reynolds	09/11/81 Orzell 409	MO
<i>Bidens bipinnata</i>	2306	Henry	09/07/82 Delozier 366	UMKC
<i>Helenium amarum</i>	2316	Johnson	08/22/82 Delozier 160	UMKC
<i>Dyssodia papposa</i>	2321	Lafayette	09/17/82 Delozier 544	UMKC
<i>Anthemis cotula</i>	2326	Atchison	06/12/76 Sprague 33	NMSU
<i>Chrysanthemum leucanthemum</i>	2330	Gentry	06/10/76 Grace 20	NMSU
<i>Arctium minus</i>	2354	Andrew	08/05/76 Nelson 32	NMSU
<i>Carduus nutans</i>	2354	Atchison	06/12/76 Sprague 23	NMSU
<i>Carduus nutans</i>	2354	Nodaway	06/ / 77 Smith 35	NMSU
<i>Carduus nutans</i>	2354	Worth	06/13/76 Mayes 20	NMSU
<i>Arctium minus</i>	2354	Mercer	10/10/76 Smith 47	NMSU
<i>Cirsium discolor</i>	2358	St. Francois	09/05/81 Orzell 395	MO
<i>Centaurea cyanus</i>	2366	Dunklin	05/05/79 Wilkerson b11-169	WARM

TAXON	MAP#	COUNTY	COLLECTOR		HERBARIUM
Cichorium intybus	2374	Buchanan	09/11/82	DeLozier 390	UMKC
Cichorium intybus	2374	Pettis	10/03/82	DeLozier 677	UMKC
Krigia biflora	2378	St. Francois	05/23/82	Orzell 502	MO
Taraxacum officinale	2385	Andrew	09/15/82	DeLozier 444	UMKC
Taraxacum officinale	2385	Douglas	10/26/82	DeLozier 779	UMKC
Taraxacum officinale	2385	Holt	09/11/82	DeLozier 393	UMKC
Taraxacum officinale	2385	Lafayette	08/02/81	Williamson	UMKC
Sonchus oleraceus	2387	Clinton	09/03/78	Daniel	NMSU
Sonchus oleraceus	2387	Jackson	05/21/79	Raveill	NMSU
Sonchus oleraceus	2387	Mercer	10/19/79	Smith 53	NMSU
Sonchus asper	2388	Atchison	06/14/76	Dixon 26	NMSU
Sonchus asper	2388	Holt	11/03/78	Siebert 32	NMSU
Sonchus asper	2388	Nodaway	06/29/76	Mayes 36	NMSU

*New Record for Missouri

Contributors

- (1) Patrick DeLozier, 1212 West Short, Independence, Missouri 64050. All specimens deposited in UMKC herbarium.
- (2) Mary Kay Solecki, Rt. 1, Box 505, Fairmount, IL 61841. All specimens deposited in SMSU herbarium.
- (3) Steve Orzell, 503 E. 7th St., Apt. G, Little Rock, AR 72202. All specimens deposited in MO herbarium.
- (4) Art Christ, 3458A Watson Road, St. Louis, MO 63139. All specimens deposited in MO herbarium.
- (5) Dr. David Castaner, Herbarium (WARM), Central Missouri State University, Warrensburg, MO 64093. All specimens in WARM herbarium.
- (6) Jay Raveill, Dept. of Natural Resources, Natural History Section, P. O. Box 176, Jefferson City, MO 65102. All specimens cited in NMSU herbarium.